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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,379	01/22/2001	Bertram Gunzelmann	GR 98 P 8060 P	2354
24131	7590	04/27/2006	EXAMINER	
LERNER GREENBERG STEMER LLP			AHN, SAM K	
P O BOX 2480			ART UNIT	
HOLLYWOOD, FL 33022-2480			PAPER NUMBER	
			2611	

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/767,379	GUNZELMANN ET AL.	
	Examiner	Art Unit	
	Sam K. Ahn	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 5 is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 7 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 02/01/06 have been fully considered but they are not persuasive.

Applicants have amended claim 1 to include the limitation of "... each of the k sections including more than one bit". The applicants further explain that the term "bit" denotes a chip of the spreading sequence (p.12, lines 13-16 of the instant application), as explained on p.8 of the argument.

Although the amended limitation may appear to overcome the claim interpretation set in the previous Office Action, after further review, the Ostman teaches this limitation.

Ostman further teaches splitting the stored received binary coded spread sequence into k sections, each of the k sections (first four blocks of 62 and 64, and second four blocks of 62 and 64) including more than one bit (or chip sequence, C1 and C2 for the first four blocks and C3 and C4 for the second four blocks). Hence, contrast to the applicants' argument on p.10 that the number of sections is equal to the number of bits, Ostman teaches that the number of sections (two) is less than the number of bits (four), as claimed.

Particularly, Ostman teaches a communication acquisition method, which comprises correlating (52 in Fig.7) a received binary-coded spread sequence arriving at a frequency f and having m bits with a locally generated spread sequence (50) having m bits, the locally generated spread sequence having k

sections (first four blocks of 62 and 64, and second four block of 62 and 64), the correlating step comprising the following steps: storing the received binary-coded spread sequence (62,64), splitting the stored received binary coded spread sequence into k sections, each of the k sections (first four blocks of 62 and 64, and second four block of 62 and 64) including more than one bit (or chip sequence, C1 and C2 for the first four blocks and C3 and C4 for the second four blocks); and correlating the k sections of the stored received binary-coded spread sequence with corresponding k sections of the locally generated spread sequence, wherein m and k are integers greater than 1, and k is smaller than m (wherein k is two as having two sections, and m is four having four bits or chip sequence, note col.7, lines 9-27).

Although Ostman teaches sampling rate at twice the symbol rate (note col.1, lines 65-67), Ostman does not explicitly teach correlating at a frequency $k*f$ (in this case twice the sampling rate).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to oversample the incoming signal at twice the sampling rate.

Applicant has not disclosed that sampling at $k*f$ provides an advantage, is used for a particular purpose or solves a stated problem.

Furthermore, one of ordinary skill in the art would have expected Applicant's invention to perform equally well with other higher sampling rate because it allows the correlators to receive sampled signals that meets or exceeds Nyquist rate. Ramesh et al. US 5,838,739 supports this teaching that oversampling

received signals (or sampling at higher than a sampling rate) at the receiver (note col.8, lines 6-12) is well-known to one skilled in the art for proper correlation.

Hence, it is well-known to one skilled in the art that minimum sampling rate or Nyquist rate must be met in order to avoid aliasing, wherein the Nyquist rate is twice the highest frequency contained within the signal.

On the other hand, oversampling rate at a much higher rate, for example, eight times the sampling rate, would cause the receiver to process superfluous number of samples that would consume more processing time, power and hardware in order to provide samples at the much higher rate.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the teaching of Ostman by oversampling at twice the sampling rate to obtain the invention as specified in claim for the purpose of meeting or exceeding the Nyquist rate.

Please note that in the Office Action Summary, paper no.102405, objecting to claim 7 was a typographical error, wherein the claim rejection clearly explains that the claim was rejected under 103 over Ostman.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostman USP 5,590,160 (cited previously).

Regarding claim 1, Ostman teaches a communication acquisition method, which comprises correlating (52 in Fig.7) a received binary-coded spread sequence arriving at a frequency f and having m bits with a locally generated spread sequence (50) having m bits, the locally generated spread sequence having k sections (first four blocks of 62 and 64, and second four block of 62 and 64), the correlating step comprising the following steps: storing the received binary-coded spread sequence (62,64), splitting the stored received binary coded spread sequence into k sections, each of the k sections (first four blocks of 62 and 64, and second four block of 62 and 64) including more than one bit (or chip sequence, C1 and C2 for the first four blocks and C3 and C4 for the second four blocks); and correlating the k sections of the stored received binary-coded spread sequence with corresponding k sections of the locally generated spread sequence, wherein m and k are integers greater than 1, and k is smaller than m (wherein k is two as having two sections, and m is four having four bits or chip sequence, note col.7, lines 9-27).

Although Ostman teaches sampling at twice the symbol rate (note col.1, lines 65-67), Ostman does not explicitly teach correlating at a frequency $k*f$ (in this case twice the sampling rate).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to oversample the incoming signal at twice the sampling rate.

Applicant has not disclosed that sampling at $k \cdot f$ provides an advantage, is used for a particular purpose or solves a stated problem.

Furthermore, one of ordinary skill in the art would have expected Applicant's invention to perform equally well with other higher sampling rate because it allows the correlators to receive sampled signals that meets or exceeds Nyquist rate. Ramesh et al. US 5,838,739 supports this teaching that oversampling received signals (or sampling at higher than a sampling rate) at the receiver (note col.8, lines 6-12) is well-known to one skilled in the art for proper correlation.

Hence, it is well-known to one skilled in the art that minimum sampling rate or Nyquist rate must be met in order to avoid aliasing, wherein the Nyquist rate is twice the highest frequency contained within the signal.

On the other hand, oversampling rate at a much higher rate, for example, eight times the sampling rate, would cause the receiver to process superfluous number of samples that would consume more processing time, power and hardware in order to provide samples at the much higher rate.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the teaching of Ostman by oversampling at twice the sampling rate to obtain the invention as specified in claim for the purpose of correlating samples that meet or exceed the Nyquist rate.

Regarding claim 2, Ostman further teaches upon correlating each section of the stored received binary coded spread sequence, shifting the bits of a respective section by one bit to replace the least significant bit of a first section variant by a succeeding bit of the received binary-coded spread sequence and to shift a most significant bit of the first section variant to be a position of the least significant bit of a succeeding section variant (see 62 in Fig.8, wherein the limitation recited is an inherent function of a shift register).

Regarding claim 6, Ostman further teaches summing the correlation results obtained per section correlation step over k section correlation steps to obtain a count result (80,82 in Fig.8); repeating the shifting step m-1 times for obtaining m-1 count results (62,64 in order to cover each of the register); and carrying out a maximum search over all the m count results (see Fig. 9 and 10 and note col.7, line 41 – col.8, line 18 to determine peak).

Regarding claim 7, although Ostman does not explicitly teach wherein a number of sections of prescribed length is $k=32$ and a chip length of the sections is $n=32$, but teaches of four in 62 in Fig.8 and four in 64, and teaches eight chip length ($n=8$). However, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the teaching of Ostman by increasing the number of sections and chip length for the purpose of creating a more robust system from hacking the system. It is well-known to one skilled in the art that the

pseudo random noise (PN) sequence is implemented to make signals appear as a noise to an unintended receivers while transmitting and receiving the signals to an intended receivers with a reasonably accurate transmission. Thus, by increasing the chip length or the PN sequence, it would be harder for an unintended receivers from hacking and receiving the signals as the signals would be more complicated to be hacked with higher number of PN sequence.

Applicant has not disclosed that having the length and sections of 32 provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with other numbers, such as four, eight, thirty two or even sixty four because the length of PN sequence can be easily modified so long as the transmitter and the receiver would multiply signals by common a PN sequence. Therefore, it would have been obvious to modify the system of Ostman to obtain the invention as specified in the claim.

Allowable Subject Matter

3. Claims 4 and 5 are allowed.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ramesh et al. US 5,838,739 and Stockburger et al. US 5,818,383 teach oversampling at the ADC to meet the Nyquist sampling theorem.

Art Unit: 2611

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER

Sam K. Ahn
4/25/06